



(11) Publication number:

**0 346 621 A3**

(12)

# **EUROPEAN PATENT APPLICATION**

(21) Application number: **89108721.5**

(51) Int. Cl.<sup>5</sup>: **H04N 9/12**

(22) Date of filing: **16.05.89**

(30) Priority: **13.06.88 US 205961**

(43) Date of publication of application:  
**20.12.89 Bulletin 89/51**

(84) Designated Contracting States:  
**DE FR GB**

(88) Date of deferred publication of the search report:  
**08.07.92 Bulletin 92/28**

(71) Applicant: **International Business Machines Corporation**  
**Old Orchard Road**  
**Armonk, N.Y. 10504(US)**

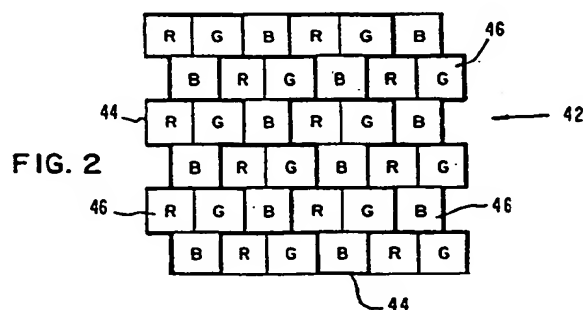
(72) Inventor: **Benzschawel, Terry Lee**  
**1 Amawalk Court**  
**Ossining New York 10562(US)**  
Inventor: **Howard, Webster Eugene**  
**1306 McKeel Street**  
**Yorktown Heights New York 10598(US)**

(74) Representative: **Blutke, Klaus, Dipl.-Ing.**  
**IBM Deutschland GmbH Intellectual Property**  
**Dept. Schönaicher Strasse 220**  
**W-7030 Böblingen(DE)**

(54) **Method of and apparatus for displaying a multicolor image.**

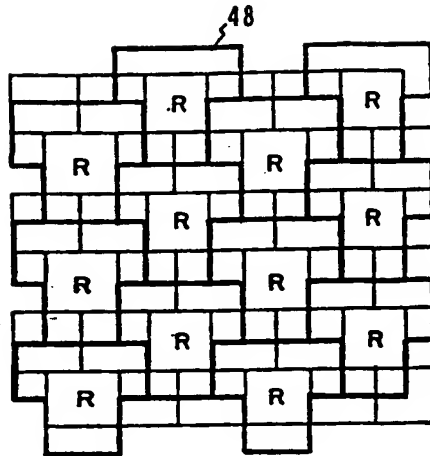
(57) A method of displaying a high resolution multicolor image on a lower resolution display. The image (40) comprises a plurality of image subpixels containing at least first and second image subpixels having first and second colors. The image is displayed on a display having display pixels (44) comprising at least first and second spatially offset display subpixels (R,G,B) capable of displaying the first and second colors, respectively. In the method, the first display subpixel (R) is displayed with an intensity which is a function of the intensities of at least two first image subpixels having positions extending over a first region (48) having an area greater than the area of the first display subpixel. The first region is approximately centered on the position of the first display subpixel. A second display subpixel is displayed with an intensity which is a function of the intensities of at least two second image subpixels having positions extending over a second region having an area greater than the area of the second display subpixel. The second region is approximate-

ly centered on the position of the second display subpixel. By using a different centered region for each separate subpixel of a composite RGB (red, green, blue) display picture element in transforming a high resolution multicolor image to a lower resolution display, higher quality images are produced as compared to using a single region for each composite RGB display picture element.



**EP 0 346 621 A3**

FIG. 6





European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number

EP 89 10 8721

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
A	US-A-4 652 912 (MASUBUCHI)	1,3,4,7, 9-11,13, 15-17, 20, 22-24, 27,29,31 32,35, 37,38, 39,41,43	H04N9/12
A	* the whole document *		
A	US-A-3 843 959 (OWAKI ET. AL.)	1-4,9, 13, 15-17, 22,27, 29-32, 37,41,43	
	* column 1, line 11 - line 58 *		
	* column 4, line 38 - line 59 *		
	* column 6, line 28 - column 7, line 12; figures 1,4,9 *		
A	RADIO FERNSEHEN ELEKTRONIK vol. 34, no. 4, April 1985, BERLIN pages 253 - 254; 'Miniaturn-Flachbildschirme' * the whole document *	10,11, 23,24, 38,39	H04N G09G
P,A	EP-A-0 300 509 (MATSUSHITA ELECTRIC INDUSTRIAL CO) * column 6, line 55 - column 9, line 20; figures 6A-7B *	1,29	
P,A	US-A-4 771 279 (HANNAH) * column 3, line 57 - column 5, line 30; figures 1-2B *	1,29	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 MAY 1992	Examiner VERLEYE J.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- A : member of the same patent family, corresponding document	

EPO FORM 150 (3.82 (P0601))

**THIS PAGE BLANK (USPTO)**